

DIAGNOSIS, PROPHYLAXIS, AND TREATMENT OF CONGENITAL SYPHILIS*†

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DIAGNOSIS

The clinical picture of early congenital syphilis is now so often modified that diagnosis must depend on very careful clinical and laboratory examination. The physician should be well acquainted with such attenuated forms of early congenital syphilis to be able to discover and treat them promptly.

Osteochondritis of the first degree, if the sole evidence, may not be proof of congenital syphilis, since it is observed in other diseases and even in healthy children. It should be borne in mind that during bismuth therapy the salts of heavy metals circulating in the body may lead to expansion and infiltration of the zone of primary calcification at the boundary between the epiphysis and metaphysis. These metal salts may be introduced not only directly to the child itself, but also through treatment of the mother during the intra-uterine period. The salts of heavy metals may simulate osteochondritis of the first degree. This "bismuth band" resolves only after several months, and at first, with the growth of the bone, it is mechanically shifted towards the metaphysis.

The development of an extensive diffuse syphilitic infiltrate around the mouth may cause the formation of radial scars. One of the varieties of such scars in congenital syphilis, which is seldom mentioned in the literature, appears mostly at the corners of the mouth and on the chin and is like the surface of a thimble. These scars remain after the healing of papules with deep infiltrates. In addition to the diffuse forms of perioral scars, linear and fan-shaped scars may occur at the corners of the mouth and resemble those remaining after streptococcal fissures. Perioral scars after diffuse syphilitic infiltration were observed in 19 per cent. of patients with late congenital syphilis.

In our experience, the first symptom of late congenital syphilis in 47 per cent. of patients appears at the age of from 5 to 8 years, in 70 per cent. from 5 to 10 years, in 84 per cent. from 5 to 12 years, and in 96.2 per cent. from 5 to 15 years. The oldest patients developed their first symptom at 23 years.

Parenchymatous keratitis occurred in 48 per cent. of patients with late congenital syphilis, most often at 7 to 14 years. The earliest age at which we observed parenchymatous keratitis was 2 years and the latest 32; 85 per cent. had lesions of both eyes. Parenchymatous keratitis has not been seen in acquired syphilis. Anti-syphilitic treatment, including penicillin, usually did not prevent the disease from attacking the second eye. With adequate treatment there were no relapses of parenchymatous keratitis; with insufficient treatment 4 per cent. of the patients developed relapses. The results of combined anti-syphilitic therapy with preparations of salvarsan, bismuth, and mercury were as follows:

23 per cent. had obviously inadequate sight (less than 0.1), and of these 2 per cent. could only count fingers;

65 per cent. had weakened eyesight (0.1 to 0.3);

12 per cent. had good eyesight (0.15 to 1.0).

Combined treatment with penicillin, salvarsan, bismuth, and mercury, together with non-specific bio-stimulating therapy (Filatov's graft placental extract injections) and local measures, has recently produced better results as regards sight recovery.

Typical examples of Hutchinsonian teeth have been noted in 16 per cent. of patients with late congenital syphilis. Such teeth have been observed only in children with congenital syphilis and not in patients with acquired syphilis or in healthy persons; this does not apply to other dental dystrophies. We consider that screw-driver teeth are just as pathognomonic as barrel-shaped teeth; a semilunar depression on the cutting edge is not a necessary feature for the diagnosis of Hutchinsonian teeth; changes in the

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lower or upper lateral incisors have no diagnostic value; the above-described lesion may involve symmetrically the two upper central incisors, but it may also occur in only one. Our observations are in sharp contrast to the data of those specialists who say that they have often seen Hutchinsonian teeth in children with sero-positive congenital syphilis without any other clinical manifestations. In almost all patients with Hutchinsonian teeth we observed some other symptom of congenital syphilis. In doubtful cases, in order to clarify the diagnosis of congenital syphilis in children of from 18 months to 2 years of age before the permanent upper central incisors have erupted, Hutchinson's dental dystrophy may be revealed by x-ray examination of the upper incisors.

The changes in the first molar have not yet received a commonly accepted name. Some specialists use the name of the research worker ("Moon's tooth", "Pfluger's tooth"), and others refer to its outward appearance ("mulberry tooth", "cup-shaped atrophy of the first molar", "bud-like", "pouch-shape"). We favour the last term and attach much diagnostic importance to the described dystrophy, but we have also met a typical "pouch-shaped" first molar in children who did not have congenital or acquired syphilis anamnestically, clinically, or serologically. Syphilis should not be diagnosed because of "pouch-shaped" molar alone; this dental sign was observed by us in only 5 per cent. of patients with late congenital syphilis.

Another lesion of equal diagnostic value in late congenital syphilis is the peculiar change in the canines which consists in hypoplasia of the masticating surface; instead of the usual masticating tubercle, the free edge develops a thin cone-shaped appendage "pike's tooth" as it is called by certain specialists.

Specific lesions of the central nervous system were seen in 27 per cent. of patients with late congenital syphilis. In 41 per cent. of all cases the beginning of neurosyphilis occurred in infancy and early childhood (up to 4 years of age), in 59 per cent. the disease appeared after 4 years, *i.e.* it developed as a symptom of late congenital syphilis.

In patients with late congenital syphilis, the lesion of the central nervous system was cerebral in 57 per cent. and spinal in 32 per cent. Mentally defective children made up 23 per cent. of syphilis patients.

We have observed skeletal lesions in 54 per cent., to which must be added the 16 per cent. of patients with Hutchinsonian teeth. Skeletal signs thus occur in 70 per cent. of patients with late congenital syphilis.

Typical sabre-shins of both legs occurred in 13 per cent. of patients with late congenital syphilis between the ages of from 4 to 12 years.

Among the late congenital syphilis patients with skeletal lesions we found diaphysitis of the long bones in 81.5 per cent., metaphysitis in 8.5 per cent., and epiphysitis in 10 per cent. of the total lesions of the long bones.

Lesions of the joints are met more frequently in late congenital than in acquired tertiary syphilis; lesions of the joints, including synovial and osteal forms, were noted in 18 per cent. of patients with late congenital syphilis. Most cases (77 per cent.) with joint disease due to late congenital syphilis were seen between 4 and 15 years of age.

Chronic symmetrical synovitis of the knee joints is one of the most characteristic symptoms of late congenital syphilis; in not a single case did we observe an acute beginning, with increased temperature, acute pain, or functional disorders, and numerous x-ray examinations from different angles revealed no lesions of the osteal epiphysis comprising the joint. The lesions of the knee joints were bilateral in 74 per cent. of the patients. In this form of the disease we have obtained positive Wassermann tests in 100 per cent. of cases; 95 per cent. of the patients also had other clinical symptoms of late congenital syphilis.

TREATMENT

Syphilis in children is treated with intermittent courses of different anti-syphilitic preparations: penicillin, salvarsan, bismuth, mercury, iodine, etc. Special emphasis is laid on the introduction of penicillin. For children with active symptoms, the first course is conducted with the patient in hospital using soluble penicillin preparations. Subsequent courses may be conducted with long-acting preparations of penicillin.

Penicillin is essential for the first three courses in infants. It allows treatment to be continued despite the serious general condition of the child and the presence of contraindications to combined therapy, and even in case of intercurrent diseases, children with early congenital syphilis may receive six courses of treatment, four of penicillin and two combined. Children with late congenital syphilis may receive eight courses of treatment, five of penicillin and three combined.

PREVENTION

We give preventive treatment to all children born to syphilitic mothers who have had inadequate treatment or no treatment at all. Before treatment is prescribed, the child is submitted to thorough clinical and serological examinations conducted during the first 3 months of life. The children must

be followed-up for 5 years as out-patients after the preventive treatment is finished.

The following measures are taken throughout the country for the prevention of congenital syphilis:

(a) Serological examinations of all pregnant women in the first and second half of their pregnancy.

(b) Maternity hospitals examine all children born to mothers who suffer or have suffered from syphilis, regardless of treatment received, and likewise those born to mothers whose history suggests the possibility of syphilis.

(c) Maternity homes have to report all syphilis cases or suspicious cases of congenital syphilis to venereological institutions and children's consultation centres.

(d) In children's hospitals beds are provided for examination and treatment of congenital syphilis and also for children who are in need of prophylactic treatment. All children who are accommodated in children's homes and boarding schools are clinically and serologically examined for congenital syphilis.

(e) Before marriage, former congenital syphilis patients are submitted to thorough clinical examination, including investigation of the cerebrospinal fluid. This requirement is absolutely obligatory for women even if they have been treated, bearing in mind the possibility of inherited syphilis being transferred to the second generation.

(f) The organs of health protection check on the organization of congenital syphilis control.